



# **Initiating a Saline Lock and IV (Ranger Lock)**

## **OBJECTIVES**

- Define Hypovolemic Shock**
- Discuss Signs and symptoms**
- Discuss and watch video of a Saline lock**
- Discuss which casualties should get fluids, and which should get a saline lock.**
- How much fluid should casualties get?**
- Demonstration and then Hands on practice.**

# **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

## **■ Hypovlemic Shock**

- Big Medical term meaning “Low (hypo)-Volume of blood (vlemic)”. Usually caused by serious bleeding. ( Examples: Cut artery, amputation, or even internal bleeding from a blast injury).**
- Severe burns can cause this, as well as extreme dehydration due to severe vomiting, diarrhea, or profuse sweating.**
- Hypovlemic shock, if left unchecked, can result in death. Therefore it is necessary to manage it early on before it is too late.**

# **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

- **Signs and Symptoms of Hypovolemic shock**
  - **Sweaty, cool and clammy skin**
  - **Pale skin**
  - **Restless, anxious, nervous, or agitated behavior**
  - **Unusual thirst**
  - **Confused mental process ( Can't think clearly )**
  - **Rapid breathing**
  - **Blotchy , bluish skin, especially around the mouth**
  - **Nausea**

# Initiating a Saline Lock and IV (Ranger Lock) Cont'd

- Controlling shock
- On the Battlefield, we accomplish this by controlling the bleeding and replacing fluid lost. (IN THE TACTICAL FIELD CARE PHASE AND LATER- NOT CARE UNDER FIRE)
- In the past everyone got an IV.
- Usually a casualty doesn't need fluids immediately, but later on they do. However at this point it is hard to find a vein and get a site established.
- Its best to obtain a site, and then seal it off. From here, IV fluids and drugs may be introduced if the casualty needs them.
- Lets watch a video of what we call a saline lock, or a Ranger Lock.

# Saline Lock Kit



[Click on picture for video](#)

# Saline Lock



[Click on picture for video](#)

# Saline Lock



[Click on picture for video](#)

# Saline Lock



[Click on picture for video](#)

# Saline Lock



[Click on picture for video](#)

# Saline Lock



[Click on picture for video](#)

# Initiate an IV

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- Inspect and assemble equipment
  - Maintain sterility while removing protective covers from the drip chamber and the outlet (long spout) of the IV container





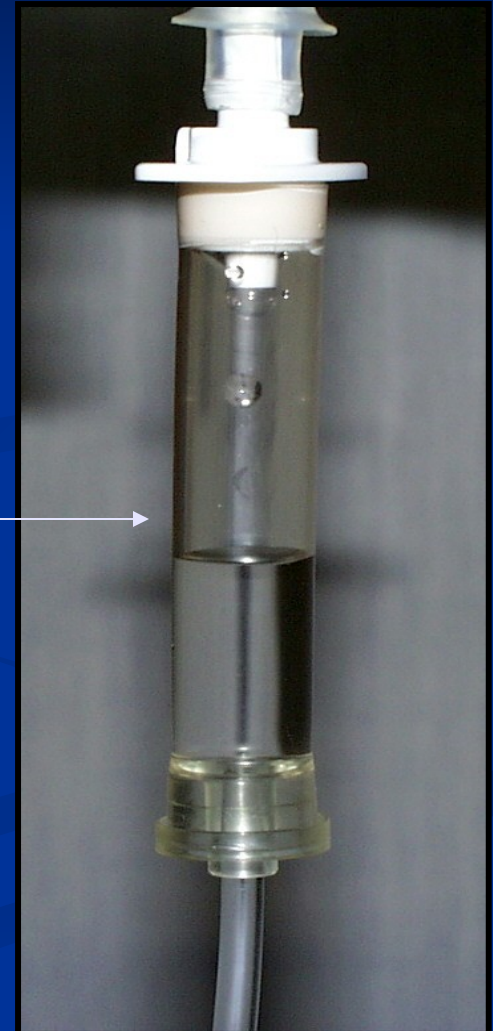
# Initiate an IV

- Insert spike into container
  - If using a bag, push spike firmly into container's outlet tube.
  - If using a bottle, push spike firmly through container's diaphragm.



# Initiate an IV

- Hang the container at least 2 feet above the level of the patient's heart if possible and squeeze the drip chamber until it is half full of solution



# Initiate an IV

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- Remove air from tubing as follows:
  - Hold end of tubing above the level of the bottom of the IV container
  - Loosen protective cover on needle adapter to allow air to escape
  - Release the clamp on tubing



**Close  
d**



**Open**

# Initiate an IV

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- Remove air from tubing continued:
  - Gradually lower the tubing until the solution reaches the end of the needle adapter



# **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

- **Who should I give fluids to and who should get a Saline lock?**
- **All Casualties who have suffered a traumatic injury should get a saline lock.**
- **Those who are injured, alert and oriented to place, day, and event should get a saline lock and be monitored.**
- **Those who are confused and who do not have a radial pulse (Systolic BP <80\* mmhg) should get 500 ml of Hextand.**
- **Why Not Ringers or Normal Saline versus Hextand?**

# **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

## **■ Ringers Lactate / Normal Saline**

- 1000 ml introduced to casualty.**
- 1 hour later only  $\frac{1}{4}$  ( or 250 ml ) is available for the body to use, and it is gone roughly 3 hours later.**

## **■ Hextand**

- 500 ml introduced to casualty.**
- 1 hour later it makes ~800 ml available for the body to use for up to 8 hours.**
- Ringers Lactate (NS) is indicated for heat injury, hang overs, over exertion. DO NOT USE HEXTAND**

# **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

## **■ REPEAT**

- Casualty's who are confused and who lack a radial pulse should get one 500 ml bag of Hextend. Re-evaluate, and if no pulse, or no improvement: then they get one more 500 ml bag of Hextend. After that, they get NO MORE.**
- Casualty's who have a radial pulse, and who are alert should just get a saline lock. Continue to monitor casualty in case they become worse.**

## **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

- **If we push too many fluids on a casualty EVEN AFTER MAJOR BLOOD LOSS, we run a danger of busting the blood clot that the body may be forming, or “watering-down” the blood which is left in the body. Watering down the blood hinders the body from attaching oxygen molecules to blood (WHICH IS THE ULTIMATE GOAL), to carry to the bodies organs and other systems.**

# **Initiating a Saline Lock and IV (Ranger Lock) Cont'd**

- **After IV is established , what should I look for?**
- **( ALSO THERE MAY BE SOME TEST QUESTIONS  
ON THIS INFO )**
- **Make sure the IV site does not become red and  
inflammed**
- **Make sure it does not start swelling up ( Fluid  
going into the skin and tissue and not the vein )**
- **If Casualty complains of 'unusual pain'**
- **IV site is uncommonly "cool to the touch"**
- **If clear fluid is observed "leaking from around the  
IV site"**
- **If you observe any of these signs, then stop and  
Discontinue the IV and initiate it again in another  
site.**

# Complications of IV Therapy

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- Infiltration
- Air embolism

**(You can easily avoid both  
with attention to detail  
during IV placement)**

# Infiltration

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Infusion of fluid into tissues at IV site

- **Signs & Symptoms**

- Poor or no IV flow
- Swelling and pale appearance at site
- Fluid leaking around site
- Pain, tenderness, and/or burning at site

- **Stop IV**, restart at another site

# Venous Air Embolism

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Obstruction of blood vessel by air in the blood causing symptoms such as chest pain and dizziness

- Caused by **large volume** of air infused into blood vessels
- Preventive measures
  - Elevate IV bag
  - Prime tubing adequately
  - Saline lock when IV infusion finished

# Questions?